

CLAIMS

1. A disposable biochip, comprising:

(a) a substrate;

5 (b) a region of the substrate having components being configured to interact with a biological substance; and

(c) a heating device integrated with the substrate, said heating device being configured to generate heat over substantially all of said region, wherein the heat produces a temperature sufficient to pyrolyze the biological substance.

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2. The biochip of claim 1, wherein the heat decontaminates the region such that the biochip is substantially free of contaminants.

3. The biochip of claim 1, wherein biological substance has a human
15 source, and the heat degrades the biological substance in the region such that the human source of the biological substance is untraceable.

4. The biochip of claim 1, wherein the heating device is configured to be electronically coupled to a bio-analysis device.

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5. The biochip of claim 1, wherein the heating device is within the region.

6. The biochip of claim 5, wherein the heating device within the region is further configured to assist the components in interacting with the biological
25 substance.

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7. The biochip of claim 6, wherein the heating device is configured to be overdriven upon command to produce the temperature sufficient to pyrolyze the biological substance.

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8. A method for testing and pyrolyzing a biological substance using a disposable biochip, comprising:

(a) conducting an assay of a biological substance on a disposable biochip, said biochip including an integrated heating device; and

(b) generating heat with the heating device such that the biological substance is brought to a temperature sufficient to pyrolyze the biological substance.

9. The method of claim 8, wherein the assay occurs on a region of the biochip having components configured for conducting the assay.

10. The method of claim 9, further comprising the step of contacting the region with reagents for use in conducting the assay.

11. The method of claim 9, wherein the heating device is within the region.

12. The method of claim 8, wherein the assay includes modulating the temperature of the biochip through at least one heating cycle, wherein during the heating cycle, the biological substance is not pyrolyzed.

13. The method of claim 9, further comprising the step of decontaminating the region such that the biochip is substantially free of contaminants.

14. The method of claim 9, wherein biological substance has a human source, and the generating heat steps degrades the biological substance in the region such that the human source of the biological substance is untraceable.

15. A bio-analysis system, comprising:

(a) a biochip having a region configured for conducting a biological assay on a biological substance; and

(b) an integrated device including an analysis chamber and a pyrolysis chamber, said analysis chamber being configured for receiving the biochip and

performing a biological assay on the region within the analysis chamber, said pyrolysis chamber also being configured for receiving the biochip, wherein upon applying heat to the region within the pyrolysis chamber, the biological substance is pyrolyzed.

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16. The bio-analysis system of claim 15, wherein the heat decontaminates the region such that the biochip is substantially free of contaminants.

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17. The bio-analysis system of claim 15, wherein biological substance has a human source, and the heat degrades the biological substance in the region such that the human source of the biological substance is untraceable.

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18. The bio-analysis system of claim 15, further comprising a heating device, said heating device being configured to generate heat over substantially all of said region, wherein the heat produces a temperature sufficient to pyrolyze the biological substance.

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19. The bio-analysis system of claim 15, wherein the integrated device is portable.

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20. The bio-analysis system of claim 15, wherein the integrated device further includes a transporter configured for transferring the biochip from the analysis chamber to the pyrolysis chamber.

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21. The bio-analysis system of claim 15, wherein the integrated device further includes a first opening and a second opening, said first opening being configured for receiving the disposable biochip into the analysis chamber, said second opening being configured for removing the biochip from the pyrolysis chamber.

22. The bio-analysis system of claim 15, wherein the pyrolysis chamber is substantially thermally isolated from the analysis chamber.

23. The bio-analysis system of claim 18, wherein the biochip includes
5 the heating device.

24. The bio-analysis system of claim 23, wherein the heating device is configured to be electrically coupled to the integrated device.

10 25. The bio-analysis system of claim 18, wherein the pyrolysis chamber includes the heating device.

26. A method for testing and pyrolyzing a biological substance using a bio-analysis system, comprising:

15 (a) contacting a region of a disposable biochip with a biological substance;

(b) providing an integrated bio-analysis device having an analysis chamber and a pyrolysis chamber;

(c) introducing the biochip into the analysis chamber;

20 (d) conducting an assay on the region within the analysis chamber;

(e) transferring the biochip from the analysis chamber to the pyrolysis chamber; and

(f) generating heat in the pyrolysis chamber such that the biological substance is brought to a temperature sufficient to pyrolyze the biological
25 substance.

27. The method of claim 26, further comprising the step of decontaminating the region such that the biochip is substantially free of contaminants.

28. The method of claim 26, wherein biological substance has a human source, and the generating heat step degrades the biological substance in the region such that the human source of the biological substance is untraceable.

5 29. The method of claim 26, wherein the contacting occurs in the analysis chamber.

30. The method of claim 26, wherein the contacting occurs prior to introducing the biochip into the analysis chamber.

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31. The method of claim 27, further comprising the step of disposing of the biochip after the region is decontaminated.

15 32. The method of claim 26, wherein the disposable biochip includes an integrated heating device.

33. The method of claim 26, wherein the pyrolysis chamber includes an integrated heating device.

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34. A bio-analysis system, comprising:

(a) a biochip having a region configured for conducting a biological assay on a biological substance;

(b) a housing having an opening configured for receiving the biochip;

25 (c) an analysis chamber configured for receiving the biochip from the opening, said analysis chamber being configured to perform a biological assay on the region; and

30 (d) a pyrolysis chamber configured for receiving the biochip from the analysis chamber, wherein upon applying heat to the region within the pyrolysis chamber, the biological substance is pyrolyzed, thereby decontaminating the region such that the biochip is substantially free of contaminants.

35. The system of claim 34, further comprising a transporter configured for moving the biochip from the analysis chamber to the pyrolysis chamber within the housing.